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Santa Clara County, California
Coyote Creek, Reach 3

Riparian Revegetation
Operation and Maintenance Manual

Contract No. DACW05-94-D-0004

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SECTION 1.0 - INTRODUCTION

1.1. Purpose of Manual: This operations and maintenance (O&M) manual has been designed as a guide to assist in the long-term maintenance and management of the Coyote Creek Reach 3 revegetation project in San Jose, California. The O&M manual assumes the revegetation project is functioning as a self-sustaining ecosystem (i.e., is capable of natural regeneration and will not require additional irrigation or fertilization after the 3-year Revegetation Contractor maintenance period) and as such requires only limited maintenance activities. However, the O&M manual also recognizes that the Coyote Creek system may experience periods when it is not self-sustaining and may require remedial measures to maintain performance standards. These measures are included as part of the O&M manual in Attachment 1, Remedial Action Plan, to ensure the comprehensiveness of the manual.

1.2. Project Location: Coyote Creek originates in the Diablo Mountain Range, along the eastern edge of Santa Clara County, California. The creek flows northeast through the cities of Morgan Hill, San Jose, and Milpitas and into the southern end of San Francisco Bay (Figure 1.0). Reach 3 of Coyote Creek, the focus of this O&M manual, extends approximately 2.5 miles from State Highway 237 to approximately 100 feet upstream of Montague Expressway (Figures 2.1 and 2.2).

1.3. History of Revegetation Program

1.3.1. Need for Flood Control Improvements: Flooding along Coyote Creek has been an ongoing problem since the early 1900's. In response to this flood hazard, flood control improvements were undertaken to contain floodflows up to the 100-year event. The Lower Coyote Creek flood control project, which includes Reaches 1, 2, and 3, was jointly implemented by the U.S. Army Corps of Engineers (Government) and the Santa Clara Valley Water District (Local Sponsor). The flood control project includes construction of overflow channels, offset levees, crossover structures, channel reinforcement, and environmental mitigation (U.S. Army Corps of Engineers 1993). This O&M manual applies only to revegetation activities performed to fulfill environmental mitigation requirements in Reach 3. It does not apply to flood control improvement maintenance or revegetation activities in Reaches 1 and 2. Reaches 1 and 2 are being maintained by the Local Sponsor under the guidelines of a separate O&M manual (Santa Clara Valley Water District 1993).

1.3.2. Pre-Project Conditions: Coyote Creek, Reach 3, supports stands of mature riparian forest vegetation dominated by cottonwoods (*Populus fremontii*) and sycamores (*Platanus racemosa*) which form a canopy over a mixed-shrub and herbaceous understory. Flood control improvements (e.g., crossover structures, channel reinforcement, and bridge expansion) have resulted in the removal of sections of the riparian forest.

1.3.3. Overview of Revegetation Program: The long-term goal of the revegetation program is to establish self-sustaining riparian vegetation to replace naturally occurring vegetation and the associated habitat value lost due to flood control improvements. To this

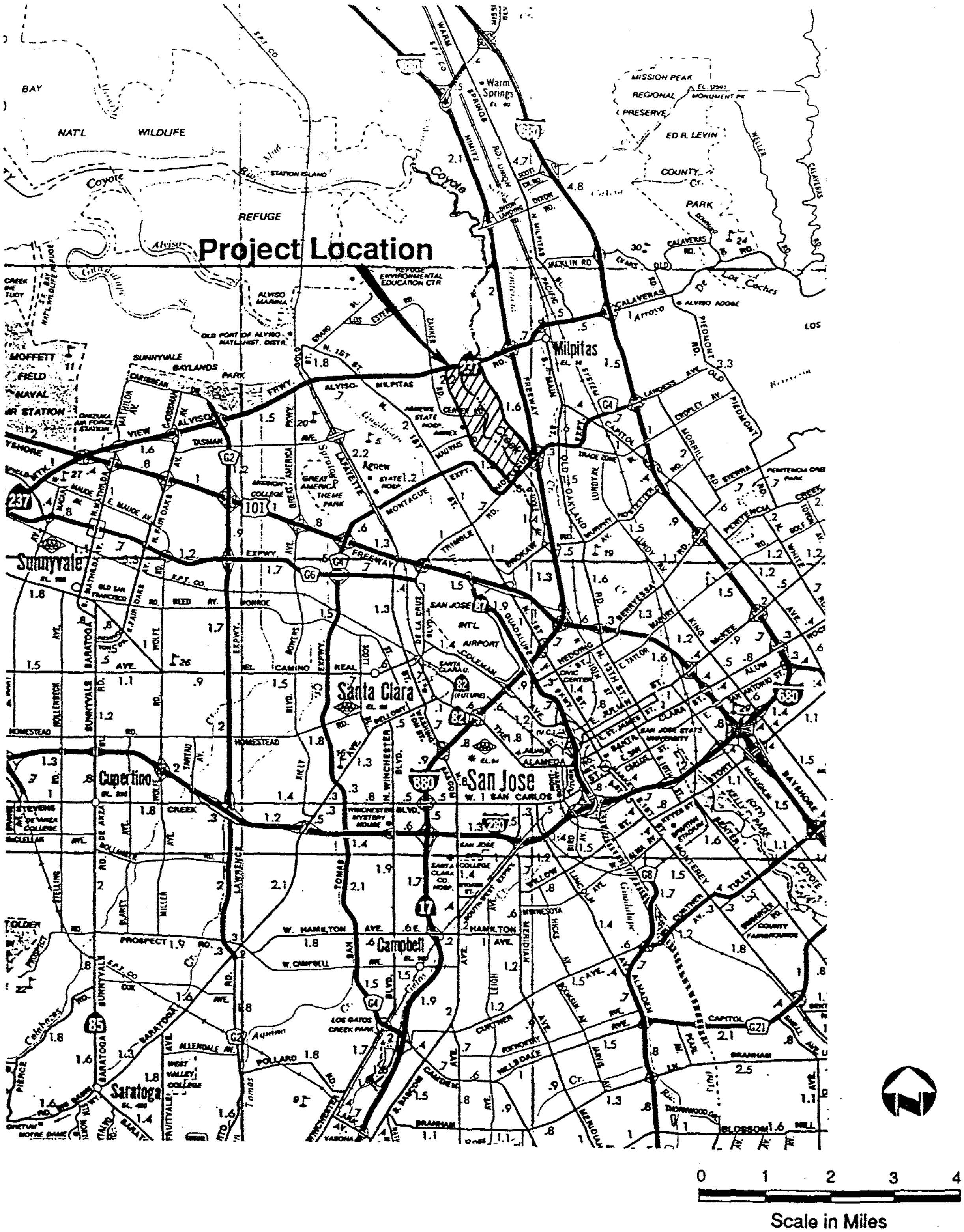


Figure 1.0
Vicinity Map

end, a total of 22.0 acres of revegetation has been installed in Reach 3, including 20.5 acres designated as riparian forest sites; 1.1 acres (970 lineal feet) designated as shaded cover sites; 0.2 acre (700 lineal feet) designated as a crossover site; and 0.2 acre (650 lineal feet) designated as a rock wall site (Figures 2.1 and 2.2). As built and as-maintained drawings were prepared by the Revegetation Contractor. These drawings provide detailed information for each of the revegetation sites (e.g., plant species and quantities, irrigation system features, and revegetation sign locations) and are on file at the offices of the Government and the Local Sponsor. The revegetation sites are discussed generally below.

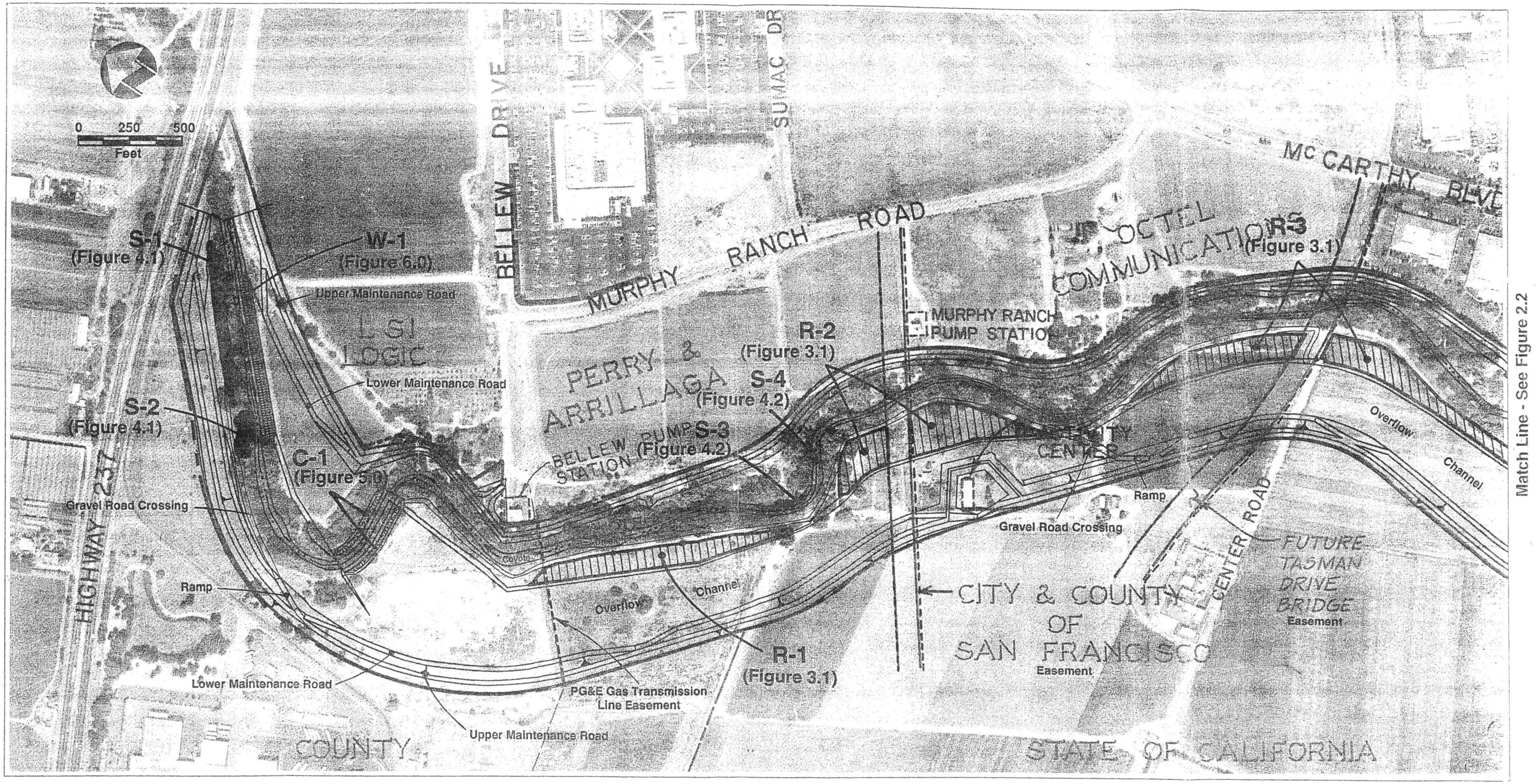
1.3.3.1. Riparian Forest Sites: Riparian forest sites are located between the creek and overflow channel (Figure 3.1) or the creek and the engineered levees (Figure 3.2). Riparian vegetation was planted in a manner to extend the existing riparian forest into the floodplain to provide additional wildlife habitat and replace vegetation affected by flood control improvements. Riparian forest sites are designated R-1 through R-6 in the original design (Figures 2.1 and 2.2). Vegetation planted as part of riparian forest sites includes trees, shrubs, vines, and herbaceous plant species. The riparian forest sites have also been seeded with a native, perennial grass cover crop.

1.3.3.2. Shaded Cover Sites: Shaded cover sites are located between the creek channel and the engineered levee (Figure 4.1) or the creek channel and the existing nonengineered levee (Figure 4.2). These sites were designed to provide predation cover, food sources, and shade for anadromous fisheries resources. The shaded cover sites are designated S-1 through S-4 in the original design (Figures 2.1 and 2.2). It should be noted that S-1 and S-2 are closer in function to a riparian forest site than a shaded cover site. This was identified in the Request for Proposal (RFP) for the revegetation installation contract (U.S. Army Corps of Engineers 1995). Vegetation planted within the shaded cover sites primarily includes riparian overstory and midstory trees and shrubs.

1.3.3.3. Crossover Site: The crossover site was constructed as part of the flood control project and is located on the downstream end of Reach 3, near Highway 237 (Figure 5.0). The function of the crossover site is to carry floodflows from the main channel to a western overflow channel. For this reason, the site was revegetated with flexible, herbaceous vegetation that will not hinder floodflow. Additionally, the vegetation within the crossover site should not exceed 6 feet at maturity or be allowed to grow 3 feet or taller above the surface elevation of the overflow channel (Figure 5.0). The crossover site is designated C-1 in the original design (Figure 2.1).

1.3.3.4. Rock Wall Site: The rock wall site was constructed as part of the flood control project and is located on the downstream end of Reach 3, near Highway 237 and adjacent to crossover site C-1 (Figure 6.0). The rock wall site was designed to reinforce a section of the bank potentially subject to high-velocity flows while providing a planting bench to support herbaceous and shrub species capable of

FUNCTIONAL ANALYSIS – VE PAYS



Index	Revegetation Site Type											
	Riparian Forest ▥						Shaded Cover ■				Crossover ▒	Rocked Wall ▤
	R-1	R-2	R-3	R-4	R-5	R-6	S-1	S-2	S-3	S-4	C-1	W-1
Cross Section Figure Number	3.1	3.1	3.1	3.2	3.2	3.1	4.1	4.1	4.2	4.2	5.0	6.0

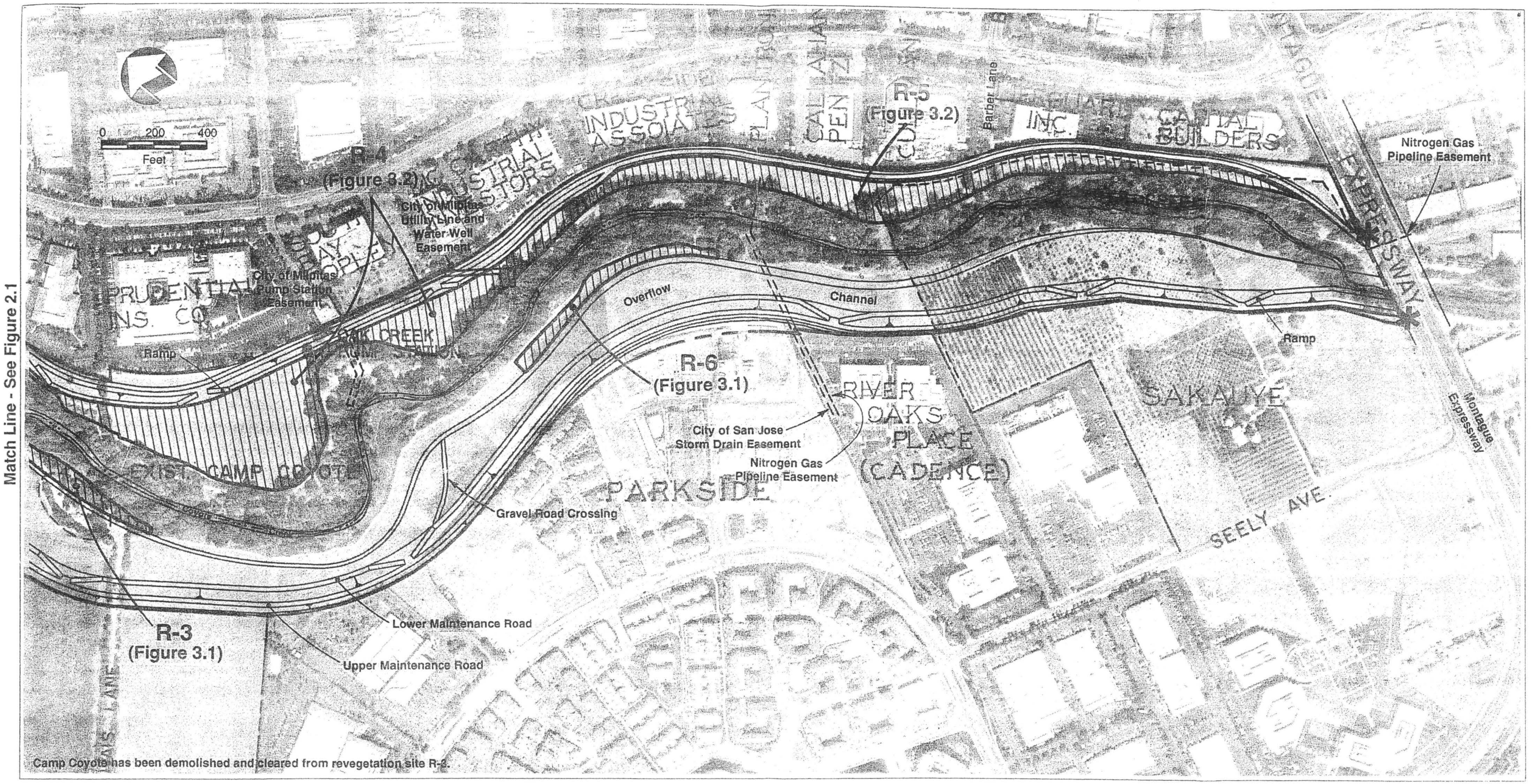
Legend

– – – Easement

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

Figure 2.1
Site Plan

1" = 400
1
1 of 2



Camp Coyote has been demolished and cleared from revegetation site R-3.

	Revegetation Site Type											
	Riparian Forest ▥						Shaded Cover ■				Crossover ▒	Rocked Wall ▤
Index	R-1	R-2	R-3	R-4	R-5	R-6	S-1	S-2	S-3	S-4	C-1	W-1
Cross Section Figure Number	3.1	3.1	3.1	3.2	3.2	3.1	4.1	4.1	4.2	4.2	5.0	6.0

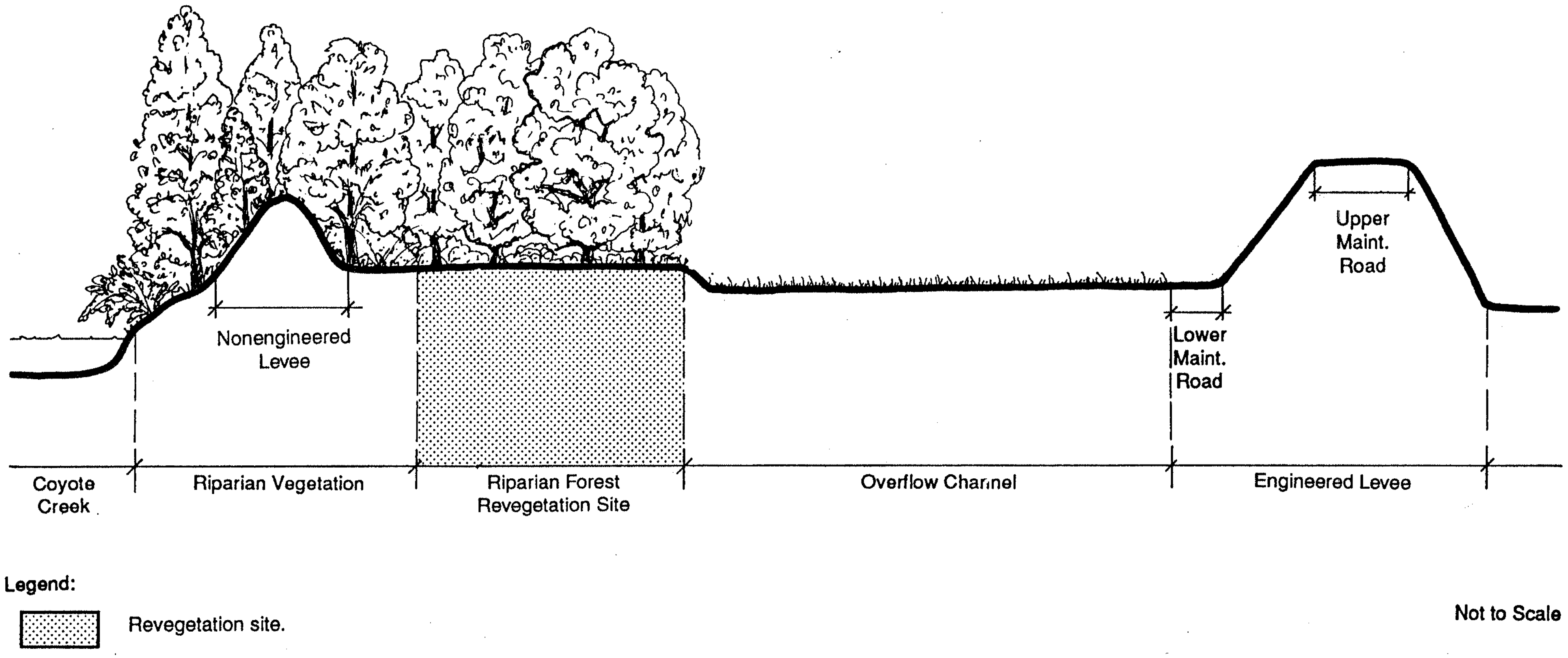
Legend

✳	Access Gates
- - -	Easement

DEPARTMENT OF THE ARMY
SACRAMENTO DISTRICT, CORPS OF ENGINEERS
SACRAMENTO, CALIFORNIA

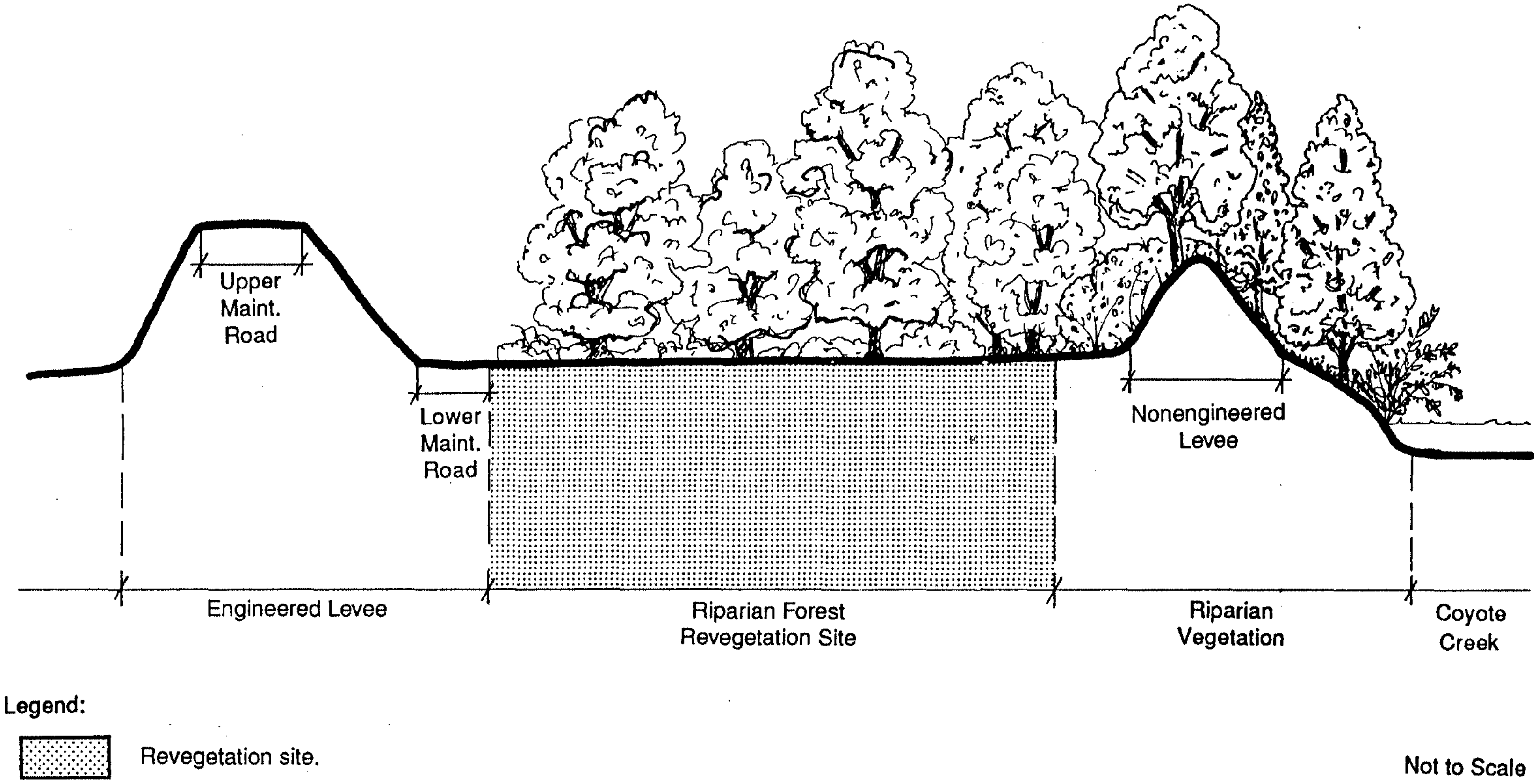
Figure 2.2
Site Plan, continued

SCALE: 1" = 400'
SHEET: 2
2 of 2



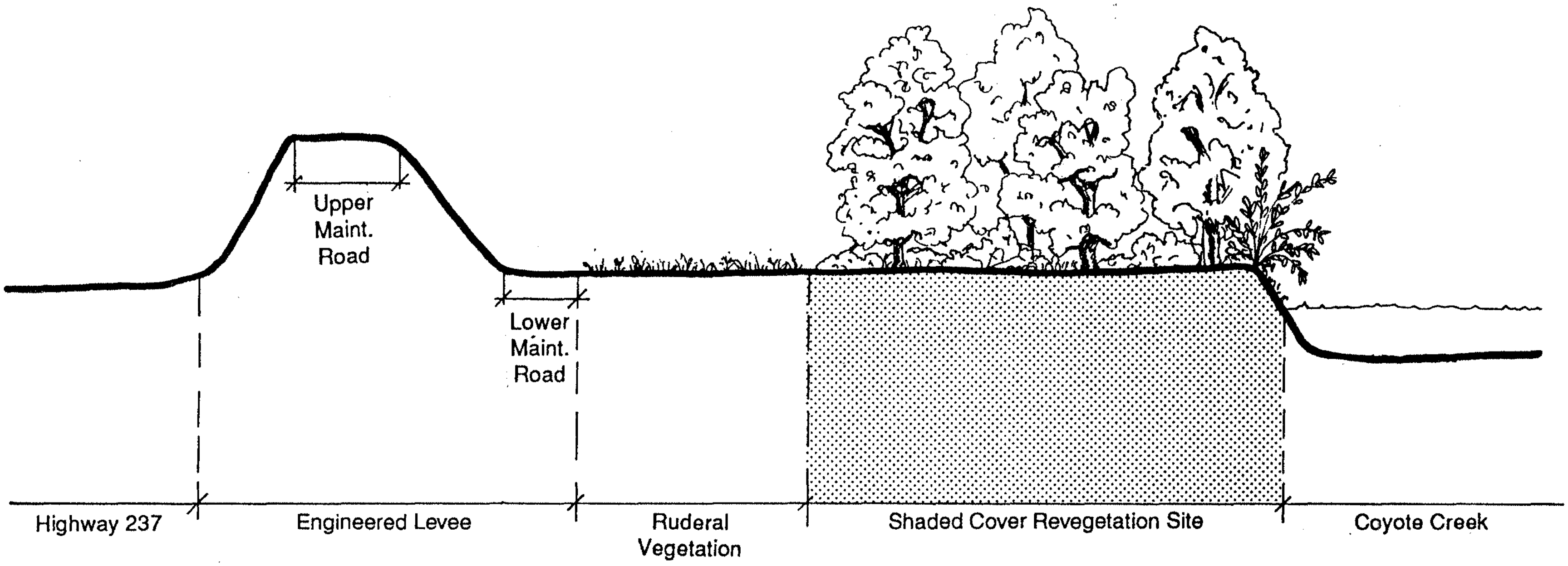
Note: This figure applies to revegetation sites R-1, R-2, R-3, and R-6.

Figure 3.1
Riparian Forest Site Adjacent to Overflow Channel
Cross Section, Typical



Note: This figure applies to revegetation sites R-4 and R-5.

Figure 3.2
Riparian Forest Site Adjacent to Engineered Levee
Cross Section, Typical



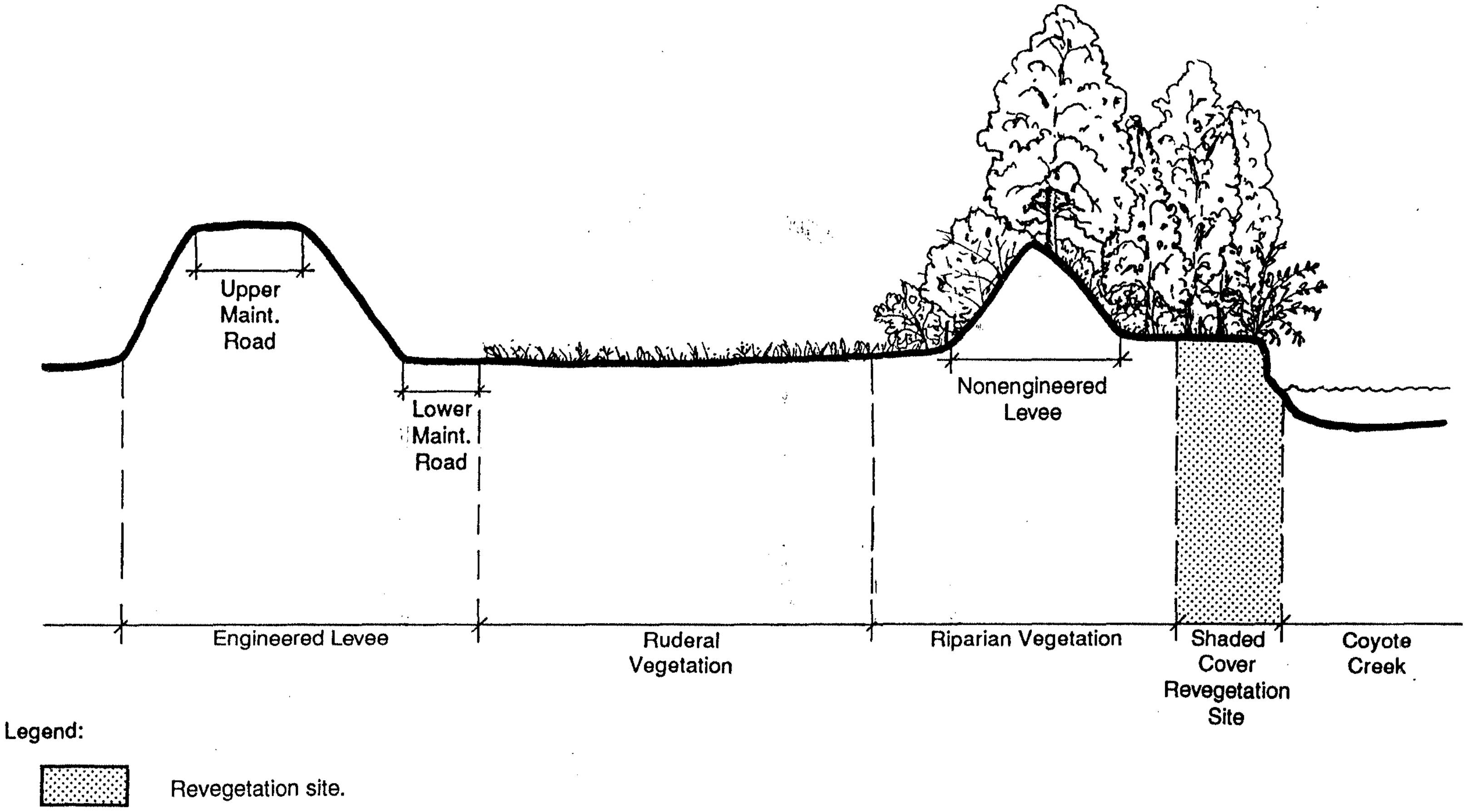
Legend:

▨ Revegetation site.

Not to Scale

Note: This figure applies to revegetation sites S-1 and S-2.

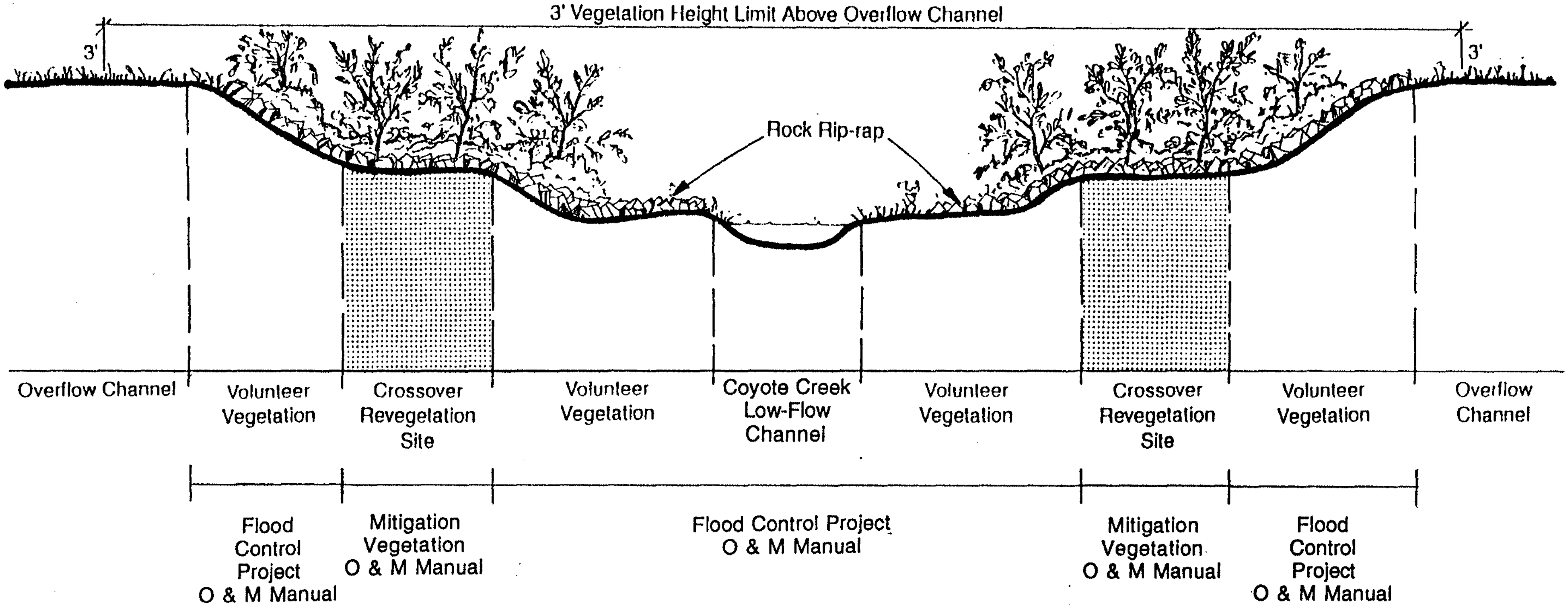
Figure 4.1
Shade Cover Site between Creek and Engineered Levee
Cross Section, Typical



Not to Scale

Note: This figure applies to revegetation sites S-3 and S-4.

Figure 4.2
Shade Cover Site between Creek and Nonengineered Levee
Cross Section, Typical


3' Vegetation Height Limit Above Overflow Channel
3'
3'
Rock Rip-rap
Overflow Channel
Volunteer Vegetation
Crossover Revegetation Site
Volunteer Vegetation
Coyote Creek Low-Flow Channel
Volunteer Vegetation
Crossover Revegetation Site
Volunteer Vegetation
Overflow Channel
Flood Control Project O & M Manual
Mitigation Vegetation O & M Manual
Flood Control Project O & M Manual
Mitigation Vegetation O & M Manual
Flood Control Project O & M Manual

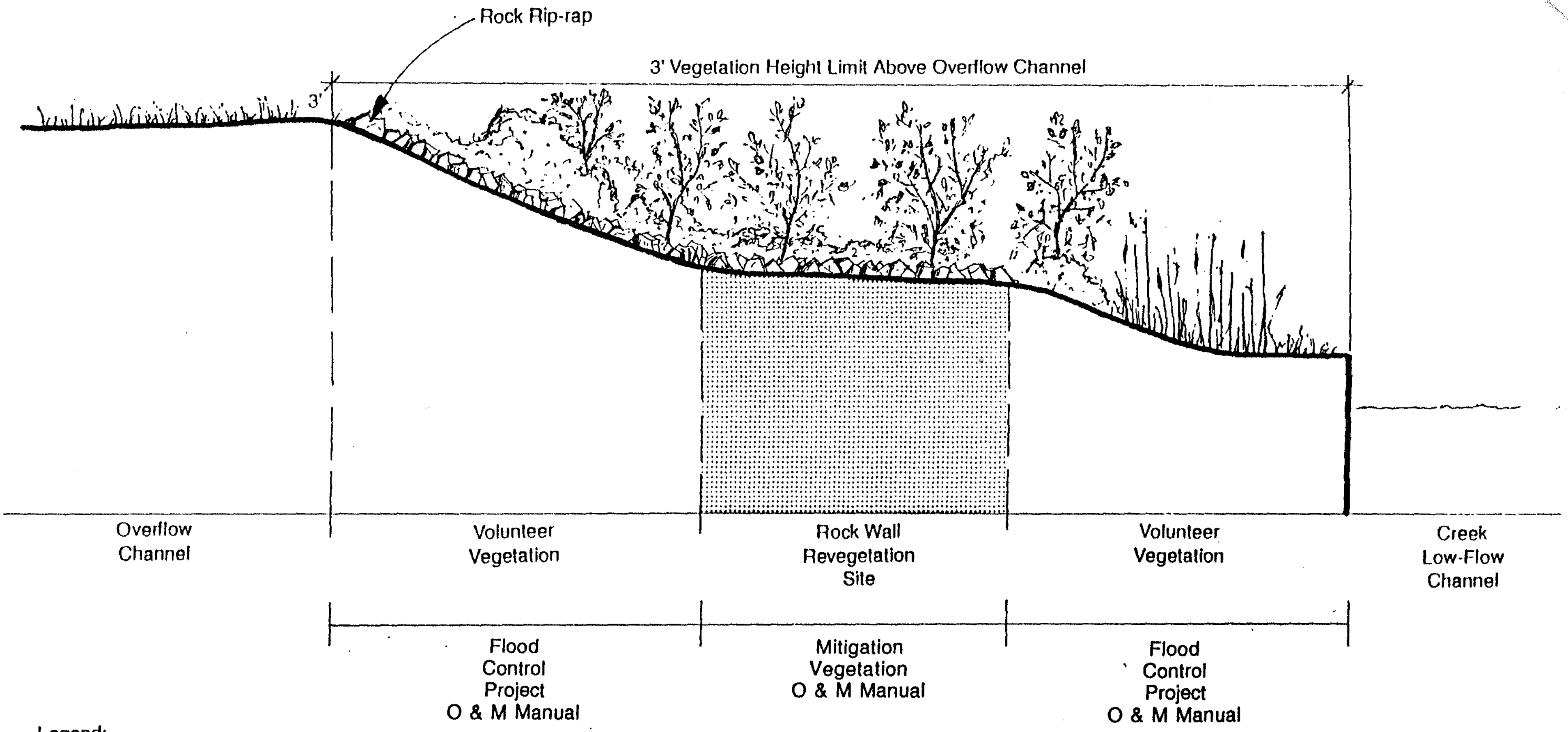
Legend:

▨ Revegetation site.

Not to Scale

*Note: This figure applies to revegetation site C-1.

Figure 5.0
Crossover Site
Cross Section, Typical


Rock Rip-rap
3' Vegetation Height Limit Above Overflow Channel
3'
Overflow Channel
Volunteer Vegetation
Rock Wall Revegetation Site
Volunteer Vegetation
Creek Low-Flow Channel
Flood Control Project O & M Manual
Mitigation Vegetation O & M Manual
Flood Control Project O & M Manual

Legend:

▒ Revegetation site.

Not to Scale

Note: This figure applies to revegetation site W-1.

Figure 6.0
Rock Wall
Cross Section, Typical

supplying some habitat value. The rock wall site is designated W-1 in the original design (Figure 2.1).

SECTION 2.0 - LOCAL COOPERATION

2.1. Limits of Responsibility

2.1.1. Government Responsibility: The Government shall monitor the actions of the Local Sponsor to ensure that they are in compliance with the provisions set forth as part of the O&M manual and other commitments established in the environmental documentation for this project, including achievement of long-term revegetation goals (see Section 1.0, paragraph 1.3.3.). The Government, in conjunction with the Local Sponsor, shall ensure that the site is protected, in perpetuity, as a natural riparian stream corridor.

2.1.2. Local Sponsor Responsibility: After the Government has accepted the project site upon successful completion of the plant establishment period by the Revegetation Contractor, the Local Sponsor shall assume all management, maintenance, and monitoring responsibilities, including all associated costs, for the project site. The Local Sponsor shall be responsible for preserving all vegetation on the project site in a natural state, including native vegetation that existed prior to implementation of the revegetation project, plantings installed as part of the revegetation contract, and native vegetation that naturally colonizes (i.e., volunteers) within the project site. Site maintenance shall include the repair, replacement and maintenance of access roads, access gates, and all other tasks as stated herein. The Local Sponsor shall also quantitatively monitor vegetation and qualitatively assess the site's progress to ensure that it is meeting long-term performance standards established for the revegetation project and prepare all corresponding monitoring reports (Attachment 2). In addition, the Local Sponsor shall be responsible for conducting periodic site evaluations and preparing all submittals (Attachment 2).

SECTION 3.0 - GENERAL PROCEDURES AND REQUIREMENTS

3.1. Applicable Regulations: The Local Sponsor shall be aware of, and adhere to, all federal, state, and local regulations that are applicable to this project, as well as any and all regulations stated in the Cooperation Agreement between the Government and the Local Sponsor.

3.1.1. Notification of Noncompliance with Applicable Regulations: The Government shall notify the Local Sponsor, in writing, of any noncompliance with applicable regulations and/or the Cooperation Agreement and the action to be taken. After the receipt of such notice, the Local Sponsor shall have 30 days in which to take corrective action, or to show intent to take corrective action. Failure to take corrective action within the allotted time period may result in punitive damages identified in the Cooperation Agreement.

3.2. Safety Requirements: The U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, and the Occupational Safety and Health Act (OSHA) Standards for Construction (29 CFG Part 1926) are both applicable to this project. The Local Sponsor shall also adhere to all other applicable safety regulations stated in the Cooperation Agreement, or elsewhere, as well as applicable regulations that may be enacted at a later date.

3.3. Work Performed Within the Floodplain: The Local Sponsor shall be aware that the project site is located within the Coyote Creek floodplain and is subject to flooding during the wet season or during other periods of peak flow. Work shall not be performed within the floodplain during periods of high water flow. If work must be performed within the floodplain, equipment and materials must be removed at the end of each day.

3.4 Environmental Protection: For the purpose of the O&M manual, environmental pollution is defined as the presence of chemical, physical, or biological agents that adversely affect human health or welfare and/or unfavorably alter ecological balances. The control of environmental pollution requires consideration of land, water, and air resources.

3.4.1. Landscape Defacement: The land resources within the project site shall be preserved in a natural condition during the long-term maintenance period (i.e., in perpetuity).

3.4.1.1. Protection of Vegetation: If it is necessary to work within revegetation sites and natural vegetation stands, the location of adjacent woody vegetation shall be staked in advance to avoid destruction or damage of the vegetation. The Local Sponsor must receive approval to proceed from the Government prior to commencement of work.

3.4.1.2. Tree Preservation: No ropes, cables, or guy wires shall be fastened or attached to any existing trees for anchorage without the approval of the Government. Where emergency use is necessary, the Local Sponsor shall adequately wrap the trunk with a sufficient thickness of burlap or other appropriate material to protect the bark. The Local Sponsor shall be responsible for any damage resulting from such use, and shall immediately report any damage to the Government.

3.4.1.3. Damage from Maintenance Operations: In the event that any trees or shrubs are damaged during maintenance operations or any other activities occurring at the project site, the Local Sponsor shall immediately contact the Government.

3.4.1.4. Damage from Vandalism and Natural Events: The Local Sponsor shall immediately report all incidents of vandalism or damage resulting from natural events (e.g., floods) to the Government. If damaged by a natural event, the affected vegetation shall be maintained in a natural state and shall not be replaced. If vandalism becomes prevalent at the project site, the Local Sponsor, in consultation with the Government, shall implement options to discourage vandalism (e.g., strategic fencing and warning signs).

3.4.2. Water Resources: The Local Sponsor shall not pollute Coyote Creek or the adjacent floodplain, or allow such activities by others, with fuels, oils, refuse, or other harmful materials. It is the responsibility of the Local Sponsor to investigate and comply with all applicable federal, state, and municipal laws pertaining to the pollution of waterways (e.g., rivers and streams).

3.4.3. Fire Control

3.4.3.1. General: Fire can be a natural occurrence within a native ecosystem. However, due to the close proximity of residential and commercial structures, fires within the project site are not desirable. All fires observed within the project site shall be immediately reported to the local fire department. After the fire has been reported, the Local Sponsor shall immediately contact the Government.

3.4.3.2. Fire Restrictions: The Local Sponsor shall not set fires, nor allow others to set fires, within the project site. Vehicular traffic shall be limited to access roads whenever possible. Other power equipment used during maintenance operations (e.g., string trimmers) shall not be set down or refueled in vegetated areas. Each vehicle used during site maintenance shall be equipped with a fire extinguisher. Smoking shall be prohibited at the project site at all times. The Local Sponsor shall be responsible for all damages incurred at the project site or to the adjacent off-site structures resulting from the negligence of the Local Sponsor.

3.4.3.3. Weed Clearing along Access Roads: The gravel access road in the overflow channel and the dirt access road on the south side of the west bank revegetation sites shall be maintained as part of this O&M manual. Weeds shall be controlled on or along the shoulders of these access roads to reduce the threat of fire. The Local Sponsor shall use a combination of vegetation management techniques (e.g., herbicide spraying and mowing). A 3-foot wide strip along each side of the access roads shall be mowed to a height of no greater than 6 inches to provide safe clearance for parked or passing vehicles, and to provide a firebreak. Herbicides shall be used in accordance with the manufacturer's recommendations and all applicable federal, state, and local regulations.

3.4. Site Cleanup: The Local Sponsor shall not litter, dump, or store refuse, nor allow such actions by others, within the project site. All refuse found within the project site shall be removed immediately and legally disposed of off-site by the Local Sponsor. After the refuse has been removed, the area shall be restored by the Local Sponsor to the condition of the adjacent undisturbed areas.

3.5. Site Access and Trespassing

3.5.1. General: The Local Sponsor shall be responsible for monitoring public and private access to the project site. Gates shall remain locked at all times to discourage unauthorized motor vehicle access. Authorized vehicular traffic shall be limited to access roads. Possible pedestrian use of the project site shall only be allowed during daylight hours. No camping or overnight use of the site shall be permitted. All incidents of illegal trespass shall be reported by the Local Sponsor to the local authorities and the Government.

3.5.2. Government Access: The Government shall be afforded access to the site at all times. In the event that the access gate locks are changed or replaced, the Government shall be immediately informed and provided with two sets of keys for each new lock.

3.5.3. Access Road Maintenance: Routine operation and maintenance of the upper and lower maintenance roads along the engineered levees is not a part of this O&M manual. The Local Sponsor shall be responsible for maintaining the gravel access road in the overflow channel and the dirt access road on the south side of the west bank revegetation sites. All damages to any access roads within the project site resulting from the actions of the Local Sponsor, shall be immediately repaired by the Local Sponsor.

3.6. Protection of Utilities

3.6.1. General: The Local Sponsor shall become familiar with the location of all existing and future water control facilities and structures, utilities, and easements within the project site. The operation and maintenance of these facilities and utilities is not a part of the O&M manual; however, the Local Sponsor shall work in cooperation with the appropriate utilities, districts or agencies to ensure that their operation is not effected in any way by the maintenance of the revegetation site.

3.6.2. Cooperative Agreements with Utilities: The Local Sponsor shall enact or maintain cooperative agreements with the utilities, districts or agencies that maintain easements within the project site. The Local Sponsor shall inform these groups about the goals of the project and how to best perform services without impacting desired vegetation.

3.6.3. Existing Easements: Existing easements within the project site include, but are not limited to, the following (Figures 2.1 and 2.2):

a. a 20-foot-wide Pacific Gas and Electric Company (PG&E) gas transmission line easement crossing R-1;

b. a 15-foot-wide City of Milpitas utility line easement and a 50-foot by 50-foot City of Milpitas water well easement crossing site R-4;

c. a 5-foot-wide nitrogen gas pipeline easement, crossing site R-5;

d. a 4.5-foot-wide nitrogen gas pipeline easement, crossing sites R-5 and R-6;

e. an 80-foot-wide San Francisco Water Department (Bay Division) pipeline right-of-way dividing site R-2;

f. a 145-foot-wide City of Milpitas Tasman Drive bridge crossing easement dividing site R-3;

g. a 30-foot-wide City of Milpitas pump station easement dividing site R-4; and

h. a 20-foot-wide City of San Jose storm drain easement south of site R-6.

3.6.4. Easement Maintenance: The utilities shall notify the Local Sponsor prior to performing construction activities or routine maintenance activities within the easements on the project site. Revegetation plantings within easements consist of low-growing shrubs (i.e., maximum height of approximately 6 to 10 feet at plant maturity) and herbaceous plants. In the event that larger trees and shrubs naturally colonize the easements, it will be the responsibility of the individual utility, district or agency to coordinate tree removal within each easement. No trees, shrubs, or herbaceous vegetation outside of the easements shall be removed or pruned unless there is a direct impact to service. The Local Sponsor and the Government shall be notified by the utility prior to the commencement of work. The Local Sponsor shall be held accountable for any damage or removal of vegetation outside of the easement.

3.7. Periodic Site Evaluations and Vegetation Monitoring Surveys

3.7.1. Periodic Site Evaluations: The Government and the Local Sponsor shall make joint evaluations of the project site, as necessary, for a minimum of one time per year. At a minimum, annual evaluations shall be performed by the Local Sponsor for the life of the project. The evaluations shall include an observation of the general condition of each revegetation site, as well as the entire project site, and a determination if additional maintenance is required. Specifically, an overall assessment (see Section 3.0, paragraph 3.7.1.) of plant vigor and site conditions; damages resulting from vandalism or natural events; public usage, access road and fire maintenance; and other physical site conditions shall be performed. All matters of non-compliance shall be corrected by the Local Sponsor.

3.7.2. Vegetation Monitoring Surveys: The Local Sponsor shall be responsible for vegetation monitoring. The long-term vegetation monitoring protocol, performance standards, and schedules are described in detail in Attachment 2, Vegetation Monitoring. Long-term vegetation monitoring shall be performed during years 4, 5, 10, 15, and at 10-year intervals for the life of the project (100 years). During year 8, the Local Sponsor shall perform a qualitative evaluation to determine whether or not the sites are likely to meet the required long-term success criteria that shall be applied in year 10 and thereafter for the life of the project (Santa Clara Valley Water District 1994).

3.8. Submittals

3.8.1. Periodic Site Evaluation Reports: The Local Sponsor shall prepare and submit periodic site evaluation reports to the Government within 15 days following each site evaluation. The report shall be submitted in letter format.

3.8.2. Vegetation Monitoring Reports: The Local Sponsor shall be responsible for vegetative monitoring as specified in Attachment 2, Vegetation Monitoring. These monitoring activities shall be summarized in a vegetation monitoring report. A draft vegetation monitoring report for the project site shall be prepared by the Local Sponsor and submitted to the Government for review. Government comments on the draft vegetation monitoring report shall be incorporated, as appropriate, into a final vegetation monitoring report that shall be submitted by the Local Sponsor to interested resource agencies. Vegetation monitoring reports shall only include information on vegetation monitoring efforts.

SECTION 4.0 - PROJECT SITE OPERATION AND MAINTENANCE

4.1. **General:** After the Government has accepted the project site upon the successful completion of the plant establishment period by the Revegetation Contractor, the Local Sponsor shall assume all management, maintenance, and monitoring responsibilities, and associated costs, for the project site. At the end of the establishment period, the revegetation sites shall be considered self-sustaining and therefore shall require no further irrigation applications or fertilization and minimal weed maintenance.

The goal of the operations and maintenance phase of the project is to provide long-term maintenance for the post-establishment period of the project (i.e., in perpetuity). Operation and maintenance activities shall include maintaining access roads and gates, removing refuse, and providing minimal vegetation maintenance and management.

4.2. Vegetation Maintenance

4.2.1. General Plant Care: Riparian habitat along Coyote Creek, Reach 3 provides nesting, cover, and food sources for wildlife. Vegetation maintenance, which can disrupt wildlife activity, shall be limited. Vegetation maintenance shall be restricted to removing weeds along access roads for fire control purposes (see Section 3.0, paragraph 3.4.3.3.); removing downed trees or branches that are blocking access roads or have fallen on fences, gates, or signs; and maintaining vegetation to a height of 3 feet or less from the surface elevation of the overflow channel at crossover site C-1.

4.2.2. Tree Preservation: All native trees, shrubs, and herbaceous vegetation within the project site shall be preserved by the Local Sponsor. Only vegetation determined to interfere with general maintenance activities and existing easement access, or vegetation considered to be target weed species shall be removed (Table 1). Removal shall only take place with approval from the Government.

4.2.3. Tree Removal and Pruning: All downed trees, limbs, and branches that do not interfere with maintenance activities shall be left in place to provide wildlife habitat. Broken or hanging tree branches that are not directly interfering with maintenance activities shall not be pruned or otherwise removed. If tree removal or pruning is necessary, the Local Sponsor shall receive approval from the Government prior to commencement of work. To maintain the flood control design of the channel, naturally volunteering woody trees and shrubs that exceed the 3-foot height limitation within revegetation sites at rock wall site W-1 or crossover site C-1 shall be removed.

4.2.4. Volunteer Plant Growth: All volunteer native trees, shrubs, and herbaceous plants that naturally colonize the site shall be preserved, unless their growth directly effects maintenance activities or occurs on easements with plant height limitations (see Section 3.0,

Table 1.0. Target Weeds to Control at Revegetation Sites

Scientific Name	Common Name
Ailanthus altissiima	tree of heaven
Arundo donax	giant reed
Cardaria draba	heart podded hoary cress
Carduus pycnocephalus	Italian thistle
Centaurea solstitialis	yellow star thistle
Cirsium vulgare	bull thistle
Conium maculatum	poison hemlock
Conyza canadensis	horseweed
Cortaderia jubata, C. selloana	pampas grass
Genista monspessulana	French broom
Cytisus scoparius	Scotch broom
Eucalyptus sp.	eucalyptus
Ficus carica	fig
Foeniculum vulgare	fennel
Hedera helix	English ivy
Lepidium latifolium	broadleaf peppergrass
Nicotiana glauca	tree tobacco
Ricinus communis	castor bean
Rhus diversilobum	poison oak
Robinia pseudoacacia	black locust
Rubus discolor	Himalayan blackberry
Salsola tragus	Russian thistle
Salix babylonica	weeping willow
Schinus molle	Peruvian pepper tree
Senecio milkanoides	German ivy
Silybum marianum	milk thistle
Tamarix sp.	tamarisk
Ulmus sp.	elm
Vinca major	periwinkle

paragraphs 3.6.3. Existing Easements, and 3.6.4. Easement Maintenance). The long-term goal of the project is to provide an ecosystem that is self-sustaining or capable of natural regeneration. A naturally functioning system will go through successional changes. The vegetation that eventually dominates the site may not be composed entirely of the species once expected to become established; however, natural successional stages should not be altered to maintain the original revegetation design concept.

4.2.5. Weed Control

4.2.5.1. General: The Local Sponsor shall preserve the project site in a natural state. After the Government has accepted the plant establishment period provided by the Revegetation Contractor, the project site shall be considered self-sustaining and therefore should require minimal weed maintenance. If chemical spraying is used to control weeds (e.g., along access roads or within revegetation sites) care shall be taken to avoid directly or indirectly spraying (i.e., chemical drift) desired vegetation.

4.2.5.2. Removal of Exotic Vegetation: The Local Sponsor shall be responsible for monitoring the project site for invasive exotic vegetation. Exotic, herbaceous species existed on the project site prior to revegetation efforts. The complete eradication of these species is unlikely and impractical. Target weed species (Table 1) shall be removed only if the population of these species has created a dominant monoculture and begins to affect the further survival of desired tree and shrub species. The Local Sponsor shall formulate an eradication plan for the target weed species and submit it to the Government for review. Implementation of the eradication plan shall be the responsibility of the Local Sponsor.

4.2.5.3. Weed Clearing Along Access Roads: Weeds shall be controlled on or along the shoulders of the access roads that shall be maintained by the Local Sponsor (see paragraph 3.5.3. Access Road Maintenance). The Local Sponsor shall use a combination of vegetation management techniques (e.g., herbicide spraying and mowing). Weeds within the access roads shall be sprayed with herbicides or mowed. A 3-foot wide strip along each side of the access roads shall be mowed to a height of no greater than 6-inches to provide safe clearance.

4.2.6. Cover Crop Maintenance: During the installation of the project by the Revegetation Contractor, all riparian forest sites and shaded cover sites S-1 and S-2 were seeded with a native, perennial cover crop mix. The intent of the cover crop was to provide initial cover to reduce weed competition as well as to establish native species within the project site. The goal of this project is to create riparian forest habitat; consequently the project site shall not be actively managed in order to retain or encourage the establishment of the cover crop or other herbaceous species. These species may eventually remain only as small remnant stands beneath or at the margin of the forest canopy.

4.2.7. Plant Protection: All plant protection devices shall be removed by the Revegetation Contractor prior to completion of the plant establishment period and acceptance of the project by the Government. Damage resulting from small rodents, rabbits, insects, or beavers shall be considered a function of the natural ecosystem. The Local Sponsor shall take no action to control animal or insect damage to the plants within the project site. However, all observable damage shall be noted and included in the vegetation monitoring report. If wildlife damage to the revegetation seedlings occurs during the early stage of site development, the Local Sponsor shall consult with the Government to determine if remedial action is necessary.

4.2.8. Damage Caused by Humans

4.2.8.1. Public Usage: Although public usage of the site is prohibited, pedestrian and bicycle traffic is a common occurrence. Passive recreational use of the site may be permitted at the discretion of the Local Sponsor, in consultation with the Government. It shall be the responsibility of the Local Sponsor to monitor and control public use of the site. If excessive vandalism or trespassing occurs, the Government may prohibit or severely limit use of the site.

4.2.8.2. Damage Caused by Local Sponsor: All damage resulting from the actions of the Local Sponsor shall be restored to the condition of the adjacent undisturbed areas. Prior to commencing maintenance activities, the Local Sponsor shall review standard maintenance practices and, if necessary, revise the current maintenance practices based upon existing site conditions.

4.2.8.3. Damage Caused by Others: The Local Sponsor is responsible for repairing all damage to the project site resulting from the actions of outside agencies or districts. The Local Sponsor shall be responsible for entering into cooperative agreements with the necessary utilities, districts and agencies maintaining easements within the project site to discuss remedial actions or punitive actions resulting from both accidental and negligent actions.

4.2.8.4. Vandalism: Due to the proximity of the project site to residential and commercial areas, the potential for vandalism at the project site is high. Vandalism to plant material may include cutting down trees and shrubs, breaking off branches and limbs, uprooting seedlings, setting fires, driving through the revegetated area, or disposing of refuse. All damage shall be identified, documented, and reported to the Government. The Local Sponsor shall be responsible for repairing all damage from vandalism.

4.2.9. Damage Caused by Acts of Nature: Damage to vegetation resulting from natural causes (e.g., floods) is expected to occur on a periodic basis. Damage resulting from natural causes is considered a part of a dynamic ecosystem and shall not be remediated unless such damage effects access roads and gates, or poses a threat to human health and safety.

Vegetation that is damaged and that does not pose a safety threat or obstruct site access shall be left in place. The Local Sponsor shall be responsible for repairing damage to roads and gates. The Local Sponsor shall document and report all damage to the Government.

4.3. General Site Maintenance

4.3.1. Refuse Removal: The Local Sponsor shall removal all litter, refuse, or materials disposed of, or stored, on the project site by representatives of the Local Sponsor or the public. All refuse and materials found within the project site shall be removed immediately and legally disposed of off-site by the Local Sponsor. After the refuse has been removed, the Local Sponsor shall be restore the area to the condition of the adjacent undisturbed areas.

4.3.2. Utility Easements

4.3.2.1. General: The Local Sponsor shall assist in protecting any existing, or future, utilities located within the project site from damage that may result from fallen or leaning trees. The appropriate utility, district or agency shall be informed of any potential damage resulting from vegetation within the project site. The utility, district or agency shall be responsible for removing all fallen or potentially hazardous trees from within the easement or immediately outside of the easement and must receive approval from the Local Sponsor prior to removing trees outside of an easement. If routine access to individual easements is necessary, the Local Sponsor shall be responsible for maintaining access roads to the easements. Providing a clearly visible access route may prevent damage to the vegetation. The Local Sponsor shall inform the point of contact for each utility, district or agency of the designated access to each easement.

4.3.2.2. Utility Easement Maintenance: The maintenance of utilities, or of utility easements, shall be the responsibility of the designated utility company, agency, or district. The utility company, agency, or district shall notify the Local Sponsor prior to performing construction activities or routine site maintenance activities within the easements. Revegetation plantings within easements consist of low-growing shrubs (i.e., maximum height of approximately 6 to 10 feet at plant maturity) and herbaceous plants. In the event that larger trees and shrubs naturally colonize the easements, it will be the responsibility of the individual utilities to coordinate tree removal within each easement. No trees, shrubs, or herbaceous vegetation shall be removed outside of the easements unless they may directly impact utility service and written approval has been provided by the Government and Local Sponsor. The Local Sponsor shall be responsible for any damage or removal of vegetation outside of the easement.

4.3.3. Revegetation Site Signage: During the construction phase of the project, revegetation site signage was installed by the Revegetation Contractor at specified sites throughout the project site. The signs shall be maintained and replaced, as necessary, by the Local Sponsor.

All incidents of vandalism or damage to the signs shall be documented and reported to the Government. Signs that are repeatedly vandalized may be removed or relocated by the Local Sponsor, at the discretion of the Government.

4.3.4. Access Roads: The Local Sponsor shall be responsible for maintaining and repairing the gravel access road in the overflow channel and the dirt access road on the south side of the west bank revegetation sites. In the event that additional access roads are necessary, the Local Sponsor shall receive approval from the Government prior to construction. All damages incurred during road construction or maintenance shall be repaired by the Local Sponsor.

4.3.5. Fire Control: The Local Sponsor shall comply with all federal, state, and local regulations pertaining to fire control requirements (including any requirements for firebreaks) and obtain any necessary permits. No burning is allowed on the project site. Any fire that starts and escapes, through negligence or violation of the law by the Local Sponsor, will result in liability for payment of fire suppression costs, as stated in the California Health and Safety Code, Sections 13007, 13008, and 13009 or other regulations that may be enacted at a later date. Appropriate precautions shall be taken to reduce the chance of fire at the project site.

4.3.6. Access Gates: The Local Sponsor shall maintain access gates at the project site. All damage to gates resulting from fallen vegetation, or by the negligence of the Local Sponsor, shall be repaired by the Local Sponsor. Gates shall remain locked at all times to prevent unauthorized vehicular access to the site. In the event that the locks are changed, the Local Sponsor shall provide the Government with two sets of keys for each lock.

4.4. Public Health and Safety Issues: The Local Sponsor shall be responsible for identifying and reporting all existing or potential health and safety issues to the Government. Such issues include, but are not limited to, water pollution, disposal of refuse or contaminants, unsafe roadways, and leaning or overhanging trees over access roads or fences. The Local Sponsor shall attempt to identify the source of the health and safety issue and shall coordinate cleanup or remediation efforts with the Government.

SECTION 5.0 - CITATIONS

Santa Clara Valley Water District. 1993. Management and monitoring manual for Coyote Creek, Reaches 1B, 2A and 2B. An integrated approach to flood control and habitat management. Santa Clara County, CA. Draft. November. San Jose, CA.

Santa Clara Valley Water District. 1994. Mitigation and Monitoring Program for Coyote Creek, Reach 3; Cities of San Jose and Milpitas, Santa Clara County, California. Final. July. San Jose, CA. Prepared for U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.

U.S. Army Corps of Engineers. 1988. Interim feasibility report. Final environmental impact statement. Coyote Creek and Berryessa Creek. April. San Francisco, CA. Prepared for Santa Clara Valley Water District, San Jose, CA.

U.S. Army Corps of Engineers. 1995. Riparian revegetation and maintenance request for proposal; Santa Clara County, California, Coyote Creek, Reach 3. August. (JSA 94-070.) Sacramento, CA. Prepared by Jones & Stokes Associates, Sacramento, CA.

ATTACHMENT 1. REMEDIAL ACTION PLAN

SECTION 1.0 - INTRODUCTION

1.1. Purpose of the Remedial Action Plan: The O&M manual assumes the riparian revegetation at the Coyote Creek, Reach 3 Mitigation Area will function as a self-sustaining ecosystem. As such, revegetation plantings shall not require supplemental irrigation applications and fertilization and shall require minimal weed maintenance activities. The Remedial Action Plan (RAP) provides a supplemental maintenance program in the event that the project site is not self-sustaining. The RAP may be used after the establishment period if the project is not achieving mitigation goals or performance standards (Attachment 2). The RAP also identifies events that would require the initiation of the RAP and outlines various maintenance procedures. The Local Sponsor shall be responsible for implementing the RAP if, at any time, the site is not meeting performance standards.

Change "Assumes" to be consistant with earlier text.

Add language bringing governm into cost share if design or establish deficiencie inhibit establishmen goals.

ATTACHMENT 1. REMEDIAL ACTION PLAN

SECTION 2.0 - DETERMINING APPLICABILITY OF REMEDIAL ACTION PLAN

2.1. Reasons for Implementing the Remedial Action Plan: There are numerous situations that could lead to noncompliance with project permits and therefore require implementation of the RAP.

2.1.1. Insufficient Irrigation: At the end of the plant establishment period, and before the final acceptance inspection, the Revegetation Contractor is required to remove and discard all above ground irrigation system equipment and materials. After the system has been removed, installed plants shall receive no further supplemental irrigation applications. If the root systems have not tapped into the groundwater table, the plant material may become stressed during the dry season which could result in a substantial reduction in plant vigor or a possible increase in plant mortality. Although the plant material may be alive, reduced plant vigor may affect long-term monitoring results through decreased canopy cover capability.

2.1.2. Weed Competition: Herbaceous and woody-stemmed weeds can compete with young plants for sunlight, soil moisture, and soil nutrients. Although young plants may survive, vigor can be severely affected by direct weed competition. There were a number of weed species identified at the project site as part of the RFP that may hinder long-term plant vigor and survival (see Table 1, Attachment 1, Section 4.0, paragraph 4.2.2.).

2.1.3. Wildlife Damage: At the end of the plant establishment period, the Revegetation Contractor shall remove and discard all plant protection cages. Losses or damage due to herbivory shall be considered a natural cause of mortality and shall not require plant replacement by the Local Sponsor. Young seedlings are extremely susceptible to wildlife damage. A large population of voles, gophers, or rabbits could cause considerable plant mortality or a reduction in plant vigor throughout the project site.

2.1.4. Negligence of Local Sponsor or Others: Damage caused by fire, debris placement, environmental pollution, equipment damage, or other incidents due to the negligence of the Local Sponsor or others (e.g., utilities, districts, agencies, or the public) may cause substantial plant mortality or a severe reduction in plant vigor.

2.1.5. Natural Events: The project site may be affected by natural events (e.g., flooding). Natural events are a function of a dynamic ecosystem; however, the effects of such events could seriously affect the establishment of a young revegetation site. If a natural event occurs during the long-term monitoring period, the damaged areas shall be monitored to ensure that the site indicates successful regeneration. Remedial action may be necessary if the site does not rebound from natural events during the early stages of project development.

ATTACHMENT 1. REMEDIAL ACTION PLAN

2.2. Determination of the Need for Remedial Action: If the project site is in noncompliance with long-term performance standards, as determined by monitoring results and qualitative visual observations, the Government shall provide the Local Sponsor with notification regarding the condition of the site and any remedial action that is deemed necessary. The notification shall include a list of noncompliance issues, a determination of the causes, a discussion of future avoidance techniques, and a remedial action schedule.

2.2.1. Determination Prior to the End of the Plant Establishment Period: Before the acceptance inspection of the 3-year plant establishment period, the Government may decide that the project site shall not be self-sufficient and shall require continued maintenance. This decision shall be based on the total survival rates and plant vigor observed during the final year of the maintenance contract. At this time, the Government may request that the Revegetation Contractor leave the irrigation system intact. If herbivory is an extensive problem, the Government may request that plant protection units remain in place.

2.2.2. Selection of Critical Areas: Remedial action may be necessary throughout the project site or in specific areas. The selection of specific or critical areas shall be based on the following considerations:

a. After remediation, is the area capable of achieving self-sufficiency in a minimal period of time (e.g., 1 to 3 years)?

b. Will modifying the plant palette result in greater plant survival rates?

c. Does the area have a greater wildlife habitat value than other areas within the project site?

d. Should other sites within or outside of the floodplain be considered for a remedial revegetation site?

ATTACHMENT 1. REMEDIAL ACTION PLAN

SECTION 3.0 - IMPLEMENTATION

3.1. Implementation of Remedial Action Plan

3.1.1. General: Remedial action operations may vary depending on current and projected site conditions. The Government shall assess site conditions and provide the Local Sponsor with a remedial action schedule that defines the critical areas and desired remedial actions.

3.1.2. Supplemental Irrigations: Supplemental irrigations shall be provided by the Local Sponsor to the critical areas, as defined by the Government. Irrigation may be applied using the original system (if preserved), a temporary on-grade system, or a water truck. The Government shall define the quantity, duration, and frequency of supplemental irrigation applications after assessing site conditions.

3.1.3. Weed Control Maintenance: The Local Sponsor shall design and implement a weed eradication plan. The plan shall be approved by the Government prior to implementation (see Attachment 1, Section 4.0, paragraph 4.2.5.2). Weed maintenance techniques may vary depending on the target weed species and the size of the problem area.

3.1.4. Plant Protection Units: The original plant protection units may remain in place or new units may need to be installed by the Local Sponsor. The Local Sponsor shall be responsible for providing, installing, maintaining, and removing all plant protection units at the discretion of the Government. The Government shall determine the type and quantity of plant protection units to be installed by the Local Sponsor.

3.1.5. Disease and Pest Control: Plant disease and insect infestation occur in a natural ecosystem. Outbreaks of plant disease or insects shall not be directly controlled by the Local Sponsor. However, if plant mortality and vigor are such that the project may not achieve performance standards, the Local Sponsor may be required to provide plant replacement.

3.1.6. Debris Removal and Site Cleanup: The Local Sponsor shall remove all refuse and environmental pollutants disposed in the project site. After the debris has been removed the area shall be restored to the condition of the adjacent undisturbed areas. Remediation may include plant replacement, supplemental irrigation, and plant protection unit installation.

3.1.7. Plant Replacement: The Local Sponsor shall be responsible for plant replacement if plant loss prohibits attainment of performance standards. Replacement plant stock shall be installed according to the specifications in the RFP (U.S. Army Corps of Engineers 1995). The species composition of replacement plants shall be based on the survival rate of other species in the immediate area. The Local Sponsor shall provide the Government with a maintenance schedule and define irrigation, fertilization, and weed maintenance requirements for the replacement stock.

ATTACHMENT 1. REMEDIAL ACTION PLAN

SECTION 4.0 - CITATIONS

Santa Clara Valley Water District. 1994. Mitigation and Monitoring Program for Coyote Creek, Reach 3; Cities of San Jose and Milpitas, Santa Clara County, California. Final. July. San Jose, CA. Prepared for U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.

U.S. Army Corps of Engineers. 1995. Riparian revegetation and maintenance request for proposal; Santa Clara County, California, Coyote Creek, Reach 3. August. (JSA 94-070.) Sacramento, CA. Prepared by Jones & Stokes Associates, Sacramento, CA.

ATTACHMENT 2. VEGETATION MONITORING

SECTION 1.0 - INTRODUCTION

1.1. General: For the purposes of the following discussions on vegetation monitoring, short-term monitoring shall occur in years 4 and 5, and will be based on individual plant counts or the line-intercept method (Section 2.0, paragraph 2.2.1.1.). Long-term vegetation monitoring shall occur in years 10, 15, and at 10-year intervals for the life of the project (100 years) and will be based on remote aerial photography interpretation and field verification.

1.2. Permit Requirements for Vegetation Monitoring: Requirements for vegetation monitoring are contained in Coyote Creek, Reach 3 Mitigation and Monitoring Program (MMP) (Santa Clara Valley Water District 1994) and as amended by the Special Conditions of Department of the Army Section 404 Permit No. 20178S12 (dated September 5, 1994).

ATTACHMENT 2. VEGETATION MONITORING

SECTION 2.0 - MONITORING PROTOCOL AND METHODOLOGY

2.1. Individual Plant Count Monitoring Protocol: Survival-based monitoring shall be used to monitor vegetation success in year 4. The methodology described in the RFP (U.S. Army Corps of Engineers 1995) shall be used.

2.2. Line-Intercept Method Monitoring Protocol: Cover-based monitoring shall be used to monitor vegetation success in year 5. This approach may also be used in year 4, at the discretion of the Local Sponsor and the Government, if the vegetation density makes it impractical to perform individual plant counts. A line-transect monitoring method (Bonham 1989, p. 108; Mueller-Dombois and Ellenberg 1974, pp. 90-92: line-intercept method) shall be used to estimate vegetative cover of trees, shrubs, and tall herbaceous species at each revegetation site. A similar monitoring method is being used successfully to monitor revegetation plantings downstream on Coyote Creek, Reaches 1B and 2.

2.2.1. Cover Sampling Design: As part of the line-transect monitoring method, permanent baseline and sampling transects shall be established to ensure reproducibility of monitoring effort from year to year.

2.2.1.1. Establishing Permanent Baseline Transects: To establish permanent baseline transects, one or more straight baseline transects shall be laid out approximately parallel to the main axis of the stream channel, on the outside of the landward edge of the revegetation site (Figure 2-1). A metric measuring tape, pulled taut, and chaining pins can be used. The shape of the site will determine how many baseline transects are necessary. For example, if a revegetation site is located along a bend in the stream channel, several baseline transects approximately parallel to the stream channel may be necessary (Figure 2-1). The end points of each baseline transect shall be marked with a permanent metal post or other permanent marker and recorded on a map. Also, the compass orientation and length of each baseline transect shall be recorded.

2.2.1.2. Establishing Permanent Sampling Transects: Sampling transects shall be positioned perpendicular from the baseline transects to the edge of the stream channel (Figure 2-1). To establish the sampling transect position off the baseline transect, a second tape fastened with a chaining pin at the sampling transect starting position on the baseline transect shall be used. The second tape shall be pulled taut between the starting position on the baseline transect and a point on the creek side of the revegetation site perpendicular to the baseline transect orientation (Figure 2-2). A compass shall be used to determine whether the sampling transect is perpendicular to the baseline transect. The second tape is then securely fastened with a second chaining pin or tied to a tree or shrub on the creek side of the revegetation site, thereby establishing the sampling transect. Sampling transect length will vary depending on the width of the revegetation site (Table B-1). One sampling transect is positioned perpendicular to the baseline transect section at a random location determined using a random number table. (Figure 2-1).

2.2.1.3. Determining Vertical Distribution of Cover: To determine the vertical distribution of vegetative cover, each sampling transect shall be divided into two vertical layers extending from 0 to 2 meters and above 2 meters.

2.2.1.4. Determine Number of Baseline Transect Sections Per Site: Baseline transects shall be divided into equal sections ranging from 5, 10, 15, or 20 meters based on the average sampling transect length for the revegetation site (Table B-1). Varying baseline transect section lengths by revegetation site ensures that an approximately equal amount of monitoring effort is spent per unit of revegetation site area.

2.2.1.5. Determine Minimum Number of Sampling Transects Per Site: A minimum of two sampling transects shall be located in each revegetation site. When baseline transects are short relative to the width of the site, the method of subdividing the transect into equal multiples of 5-meter sections is abandoned. In that case, the baseline transect should be subdivided into two sections of equal length. One sampling transect is then located perpendicular to a randomly chosen point in each baseline transect section.

2.2.2. Cover Sampling Methods: With the sampling transect in place, line-intercept measurements shall be made by recording the beginning and end points of the vertical projection of the outlines of native trees, shrubs, and herbaceous species onto the tape measure, recorded to the nearest decimeter. When plants are in a deciduous state and/or their outlines are irregularly shaped, the plants shall be "rounded out" (Figure 2-2). Each tree, shrub, and herbaceous species intersected by the sampling transect shall be identified and recorded for both vertical layers using standard plant species codes (Table 2-2). A standard data form has been developed and should be used for each sampling transect (both layers can be recorded on the same form) (Figure 2-3).

2.2.2.1. Cover Categories: Five cover categories have been developed as part of the cover sampling protocol. When no trees, no shrubs, or nontarget herbaceous species (i.e., native and non-native herbaceous species that were not planted as part of revegetation activities) are present, the following cover categories are used as defined below:

a. HERB = herbaceous species, both native and non-native, that were not planted as part of revegetation activities.

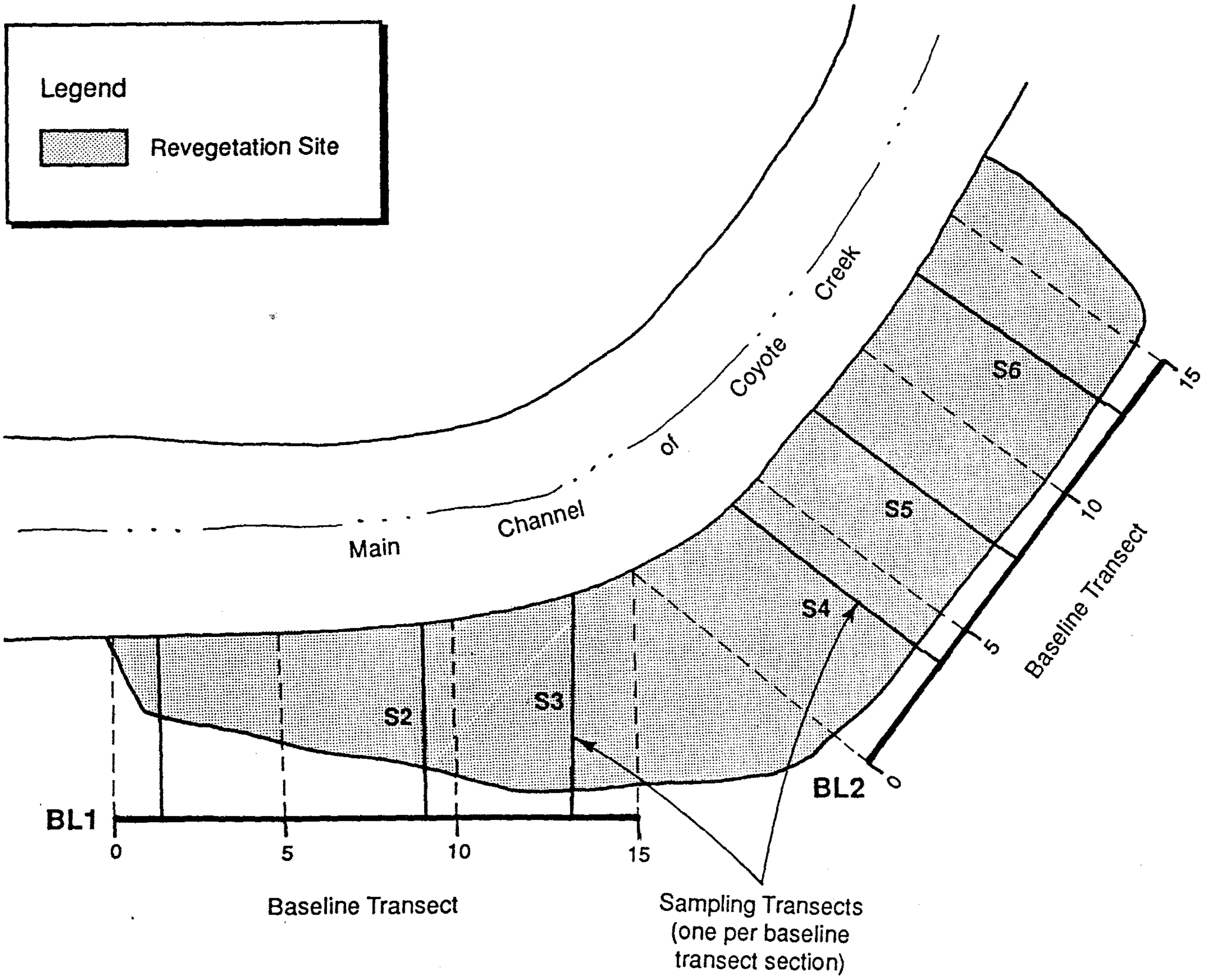


Figure 2-1.
Baseline and Sampling Transect Locations

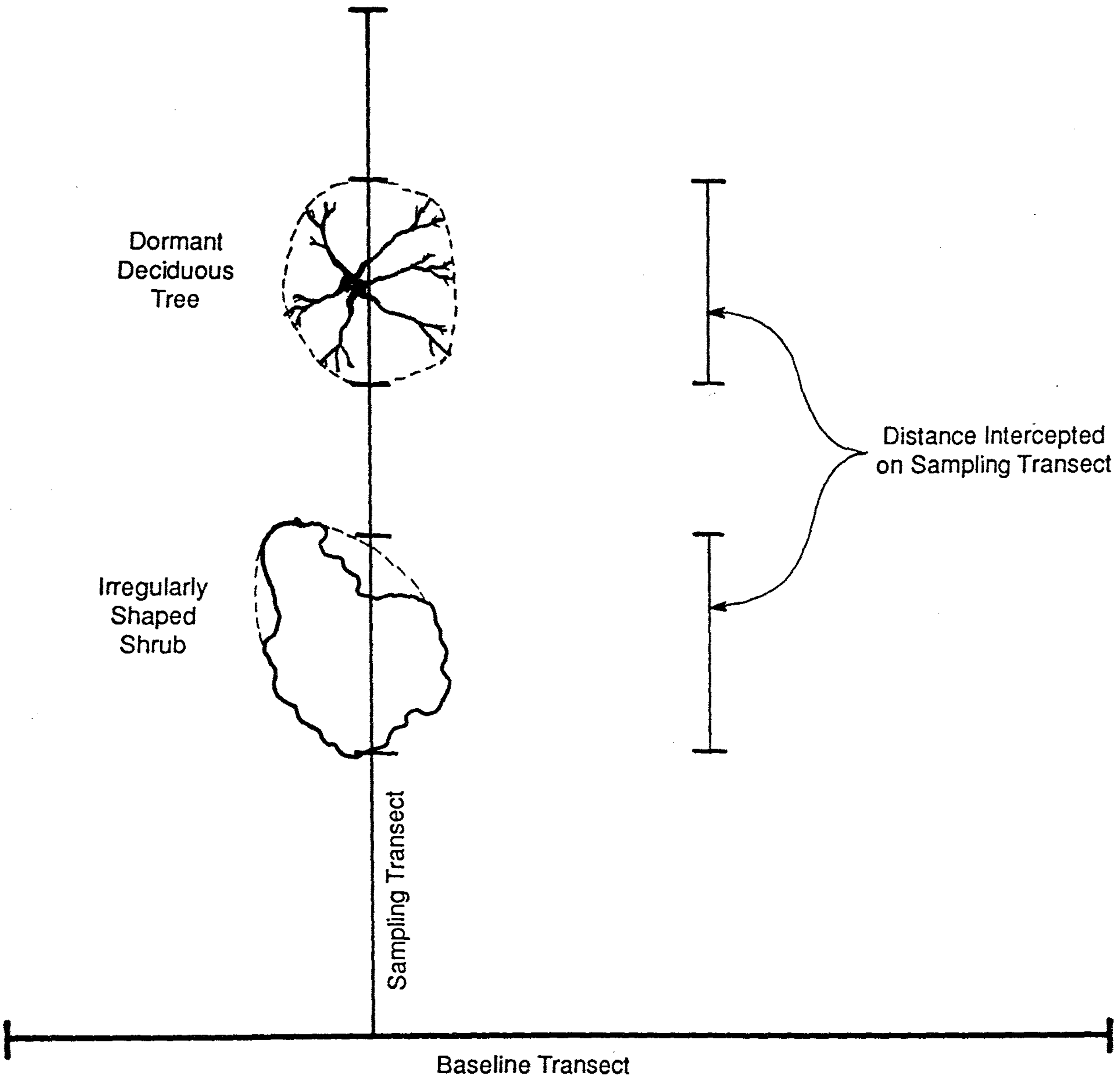


Figure 2-2.
Examples of Rounding Out Plant Canopies
for Line-Transect Measurements

Coyote Creek Vegetation Cover Monitoring

Date:

Personnel:

Revegetation site:
Sample Transect #:
Baseline transect #, length (m), heading:
Position on Baseline Transect (in meters):

Layer

0 – 2 meters		greater than 2 meters	
distance	species	distance	species
0 –		0 –	

Figure 2-3.
Field Data Form

b. LITTER = dead plant material not attached to live plants (e.g., dead leaves on the soil surface and standing dead herbaceous species). The canopies of material in the LITTER cover category are not "rounded out" as was done for live material; rather, only the intersection of the dead material is recorded. This is done because the dead material will never have leaves or roots so it has no sphere of influence. (Note: Dead material attached to a live plant is included as cover of the live plant species.)

c. BARE = bare soil.

Additional cover categories include SNAG and NONE and are defined below:

d. SNAG = dead trees, shrubs, and herbaceous species. Like LITTER, the canopies of material in the SNAG cover category are not "rounded out" as was done for live material; rather, only the intersection of the dead material is recorded.

e. NONE = no vertical projection of vegetation above 2 meters intersects the sampling transect.

When two or more species overlap in the same layer of the sampling transect, both species shall be recorded on the data sheet.

2.2.3. Data Management and Analysis: To facilitate data entry and analysis, a revegetation site statistical analysis computer program has been previously developed for the Local Sponsor and is applicable for use with this vegetative cover monitoring program. With the aid of this computer spreadsheet program, sampling transect intercept distances can be transferred to cover values for each transect. The computer spreadsheet program calculates weighted cover averages for each revegetation site using transect lengths as weights.

2.3. Aerial Photograph Interpretation Monitoring Protocol: Aerial photographs shall be used to monitor riparian vegetation cover beginning in year 10; at this time it is anticipated that vegetation density can be reasonably determined through the use of aerial photographs versus the more labor intensive line-intercept methods described previously. Rectified, infrared or color aerial photographs of a scale appropriate for detailed interpretation (e.g., 1 inch = 50 feet) shall be used to determine vegetative cover at the revegetation sites. Aerial photograph interpretation shall be field verified with qualitative visual estimates. The aerial photographs shall be taken in June to correspond with the peak of vegetative cover.

2.4. Photo Documentation: Color photographs shall be taken from locations established by the Revegetation Contractor and as identified on the as-built drawings. The methodology described in the RFP (U.S. Army Corps of Engineers 1995) shall be used.

Table 2-1. Relationship between Baseline Transect Section Lengths and the Average Sampling Transect Length for a Site

Average Sampling Transect Length (in meters)	Baseline Transect Section Length (in meters)
Up to 7.5	5
7.5 - 12.5	10
12.5 - 17.5	15
Greater than 17.5	20

ATTACHMENT 2. VEGETATION MONITORING

SECTION 3.0 - PERFORMANCE STANDARDS

3.1. General: Additional information regarding performance standards for riparian vegetation are found in the RFP, MMP, and the special conditions of the Corps' Clean Water Act, Section 404 permit.

3.1.1. Short-Term Performance Standards: Individual plant counts shall be performed in year 4. However, the cover-based monitoring approach may be substituted in year 4 at the discretion of the Local Sponsor and the Government. The cover-based approach of vegetation monitoring shall commence in year 5, or earlier, at the discretion of the Local Sponsor and the Government.

3.1.1.1. Individual Plant Count Performance Standards: The year 4 target survival rate for container plants at Revegetation Sites R-1 through R-6, S-1, S-2, C-1 and W-1 shall be 75% of the total plants originally installed. The survival rates for container plants and pole cuttings at Revegetation Sites S-3 and S-4 shall be 50% of the total plants originally installed.

3.1.1.2. Line Intercept Method Performance Standards: The revegetation sites must have an average absolute middle-to-upper canopy coverage of 45% or greater by year 5. According to the special conditions of the Corps' Section 404 permit, "year 5 success criteria will not be considered to have been met until at least 2 years after the last major human intervention". For example, if supplemental irrigations or replanting are performed during year 4, the year 5 success criteria shall not be considered as achieved until year 6.

3.1.2. Long-Term Performance Standards: After the short-term vegetation monitoring is completed, monitoring is not required again until year 10. During year 8, the Local Sponsor shall perform a qualitative evaluation to determine whether or not the revegetation sites are likely to meet the required the long-term success criteria of complete canopy coverage to be applied beginning in year 10.

ATTACHMENT 2. VEGETATION MONITORING

SECTION 4.0 - MONITORING AND REPORTING SCHEDULE

4.1. Vegetation Monitoring: Vegetation monitoring shall occur during the short-term and long-term monitoring periods.

4.1.1. Short-Term Vegetation Monitoring Schedule: Short-term monitoring during the post-establishment period (i.e., years 4 and 5) shall be conducted in early September prior to the dormant season.

4.1.2. Long-Term Vegetation Monitoring Schedule: Long-term monitoring during the post-establishment period shall be conducted in years 10 and 15, and then at 10-year intervals thereafter for the life of the project (100 years). This long-term monitoring shall be conducted in June to correspond with the peak of vegetative cover.

4.2. Report Schedule: All data collected during specified monitoring years will be summarized in a final monitoring report for that year. The reports shall be submitted during December of each monitoring year to the United States Army Corps of Engineers, United States Fish and Wildlife Service, National Marine Fisheries Service, California Department of Fish and Game, and the local Reclamation District.

4.3. Report Content: The vegetation monitoring reports shall include a discussion of monitoring methodology, analysis of data with respect to performance standards, and suggested remedial actions, as appropriate. Each monitoring report shall also contain photo documentation for the current year, data for peak flows in the creek, monthly rainfall data collected at the Coyote Creek Riparian Station in Reach 2, a copy of each periodic site evaluation conducted during that year, and all other data specified in the MMP.

4.4. Report Format: Reports shall be prepared in 8.5-inch by 11-inch format. Any maps or attachments that may be included which are larger than 8.5-inch by 11-inch shall be folded and placed in a map pocket following the text. A total of three reports shall be submitted to each agency for each monitoring survey.

ATTACHMENT 2. VEGETATION MONITORING

SECTION 5.0 - CITATIONS

Bonham, C. D. 1989. Measurements for terrestrial vegetation. John Wiley & Sons. New York, NY.

Mueller-Dombois, D., and H. Ellenberg. 1974. Aims and methods of vegetation ecology. John Wiley & Sons. New York, NY.

Santa Clara Valley Water District. 1994. Mitigation and Monitoring Program for Coyote Creek, Reach 3; Cities of San Jose and Milpitas, Santa Clara County, California. Final. July. San Jose, CA. Prepared for U.S. Army Corps of Engineers, Sacramento District, Sacramento, CA.

U.S. Army Corps of Engineers. 1995. Riparian revegetation and maintenance request for proposal; Santa Clara County, California, Coyote Creek, Reach 3. August. (JSA 94-070.) Sacramento, CA. Prepared by Jones & Stokes Associates, Inc., Sacramento, CA.